

Borehole

# 20-00-11

Log Event A

## Borehole Information

Farm : <u>B</u>	Tank : <u>B</u>	Site Number : <u>299-E33-55</u>
N-Coord : <u>45,508</u>	W-Coord : <u>52,815</u>	TOC Elevation : <u>651.71</u>
Water Level, ft :	Date Drilled : <u>12/31/1944</u>	

## Casing Record

Type : <u>Steel-welded</u>	Thickness, in. : <u>0.365</u>	ID, in. : <u>10</u>
Top Depth, ft. : <u>0</u>	Bottom Depth, ft. : <u>150</u>	
Type : <u>Steel-welded</u>	Thickness, in. : <u>0.406</u>	ID, in. : <u>12</u>
Top Depth, ft. : <u>0</u>	Bottom Depth, ft. : <u>50</u>	

## Borehole Notes:

Borehole 20-00-11 was drilled in December 1944 to a depth of 150 ft. According to available records, this borehole was constructed with a 12-in. casing that was driven to a depth of 50 ft. A 10-in. casing was installed inside the 12-in. casing and driven to a depth of 150 ft. The 10-in. casing was perforated from 50 to 150 ft at an interval of six perforations per foot. A plug consisting of half a sack of grout was placed at the bottom of the 10-in. casing. The casing thickness is presumed to be 0.365 in. for the 10-in. casing and 0.406 for the 12-in. casing on the basis of the published thicknesses for schedule-40, 10-in. and 12-in. steel tubing, respectively. Therefore, the combined thickness of the double-cased interval from 0 to 50 ft is 0.771 in. A casing correction factor for 0-65 in. casing was used during data reduction for this interval, which will result in slightly lower calculated concentrations of the radionuclides. A correction for 0.365-in. casing was used for the interval from 50 ft to the bottom of the borehole.

## Equipment Information

Logging System : <u>2B</u>	Detector Type : <u>HPGe</u>	Detector Efficiency: <u>35.0 %</u>
Calibration Date : <u>11/1997</u>	Calibration Reference : <u>GJO-HAN-20</u>	Logging Procedure : <u>MAC-VZCP 1.7.10-1</u>

## Log Run Information

Log Run Number : <u>1</u>	Log Run Date : <u>11/06/1998</u>	Logging Engineer: <u>Alan Pearson</u>
Start Depth, ft.: <u>0.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>13.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>
Log Run Number : <u>2</u>	Log Run Date : <u>11/09/1998</u>	Logging Engineer: <u>Alan Pearson</u>
Start Depth, ft.: <u>12.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>71.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>



Spectral Gamma-Ray Borehole  
Log Data Report

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20-00-11

Log Event A

Log Run Number :	<u>3</u>	Log Run Date :	<u>11/10/1998</u>	Logging Engineer:	<u>Alan Pearson</u>
Start Depth, ft.:	<u>151.5</u>	Counting Time, sec.:	<u>100</u>	L/R : <u>L</u>	Shield : <u>N</u>
Finish Depth, ft. :	<u>70.0</u>	MSA Interval, ft. :	<u>0.5</u>	Log Speed, ft/min.:	<u>n/a</u>

### Analysis Information

Analyst : P.D. Henwood

Data Processing Reference : MAC-VZCP 1.7.9

Analysis Date : 05/24/1999

#### Analysis Notes :

The pre-survey and post-survey field verification for the logging run met the acceptance criteria established for peak shape and system efficiency. The energy calibration and peak-shape calibration from the accepted calibration spectrum that most closely matched the field data were used to establish the peak resolution and channel-to-energy parameters used in processing the spectra acquired during the logging operation.

A casing correction factor for a 0.71-in.-thick steel casing was applied to the data derived from the double-cased interval from 0 to 50 ft to determine the radionuclide concentration data during the analysis process; a 0.365-in. casing thickness was used for the interval from 50 to 100 ft.

#### Log Plot Notes:

Separate log plots show the man-made and the naturally occurring radionuclides. The natural radionuclides can be used for lithology interpretations. The headings of the plots identify the specific gamma rays used to calculate the concentrations. Uncertainty bars on the plots show the statistical uncertainties for the measurements as 95-percent confidence intervals. Open circles on the plots give the MDL. The MDL of a radionuclide represents the lowest concentration at which positive identification of a gamma-ray peak is statistically defensible.

A combination plot includes the man-made and natural radionuclides, the total gamma derived from the spectral data, and the Tank Farms gross gamma log. The gross gamma plot displays the latest available digital data. No attempt has been made to adjust the depths of the gross gamma logs to coincide with the SGLS data.